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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/468,668	12/21/99	KWEEDER J	30-4874

IM52/1003

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EXAMINER	
MADSEN,R	
ART UNIT	**PAPER NUMBER**
1761	3

DATE MAILED: 10/03/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Applicati n No. 09/468,668	Applicant(s) KWEEDER ET AL.	
	Examiner Robert Madsen	Art Unit 1761	

-- The MAILING DATE of this communication appears on the cover sheet with the correspond nc address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-13 is/are pending in the application.

4a) Of the above claim(s) 11-13 is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-10 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) 1-13 are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-10, drawn to a fertilizer prilling method, classified in class 71, subclass 31.

II. Claims 11-13, drawn to an apparatus for prilling, classified in class 425, subclass 6.

The inventions are distinct, each from the other because:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, the apparatus of invention II may also be used to make explosives.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Melanie Brown on September 10, 2001 a provisional election was made with traverse to prosecute the invention of a prilling method , claims 1-10. Affirmation of this election must be made by applicant in replying

to this Office action. Claims 11-13 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 and 7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1 and 7 recite the limitation "the prill head" in lines 6 and 7, respectively. There is insufficient antecedent basis for this limitation in the claims. For examination purposes this limitation will be ignored.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Greenhalgh (US 2510574).

Greenhalgh teaches prilling a melt slurry providing a first molten component (e.g. lead), mixing/reacting a arsenic to form a complex oxide, and using vibration (i.e. mechanical agitation) to reduce the size of exiting molten material, or to shear thin the mixture (Figure 2, Column 6, lines 39-67, Column 3, lines 11-67, Column 4, lines 4-75).

Claims 1,2, 5, 7 and 10 are rejected under 35 U.S.C. 102(b) as being anticipated by De Bruyne et al. (US 3055049).

De Bruyne et al. teach prilling a melt slurry, as recited in claim 2, by providing molten ammonium nitrate, mixing/reacting limestone or dicalcium phosphate and using mechanical agitation, including a scraping blade (item 5 in Figure 1) as recited in claim 7, to shear thin the melt and prevent solidification of the melt, as recited in claim 1 and 7 (Column 1, lines 10-55). Furthermore, since Bruyne et al. teach adding calcium compounds, the melt would have micronutrients, as recited in claim 5 and 10.

Claims 1-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Bradley (US 3952078).

Bradley teaches prilling a melt slurry through a distribution plate, as recited in claim 2, that if using molten ammonium nitrate, ammonium sulfate may be added, as recited in claim 3 (Column 4, lines 33-55), and mechanical agitation (i.e. vibration via a plate transverse to the distribution plate, Column 4, lines 26-32) is provided to shear thin the melt, as recited in claim 1. Additionally, Bradley teaches less than 2% water, as recited in claim 4 (Column 4, lines 43-47), and also adding micronutrients (i.e. magnesium), as recited in claim 5 (Column 4, lines 52-56).

Claims 1,2,3,6,7, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Gelhaar (Swedish Patent No. 70119).

Gelhaar teaches prilling a melt slurry of a ammonium nitrate and ammonium sulfate that are mixed, reacted, and mechanically agitated, as recited in claims 1 - 3, 8 with surface scraping blades (i.e. screw C), as recited in claim 7, and a pressurized nozzle assembly (item D) as recited in claim 6.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3,4 and 8, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over De Bruyne et al. (US 3055049) as applied to claims 1 and 7, respectively, in view of Brown Jr. et al. (US 3317276) and Bradley (US 3952078)

As discussed in the rejection of claims 1 and 7, De Bruyne et al. teach the general method of producing a prilled fertilizer from a melt slurry comprising a mixture/reaction of molten ammonium nitrate and a second component (e.g. limestone, dicalcium phosphate, etc.) wherein the prilling is aided by mechanical agitation, including a scraping blade (item 5 in Figure 1), to shear thin the melt (Column 1, lines 10-55). Although De Bruyne et al. is silent in teaching the fertilizer melt slurry comprises ammonium sulfate as a second component and the melt slurry comprises no more than 2% water, as recited in claims 3,4,8, and 9, adding ammonium sulfate to the

molten ammonium nitrate and maintaining a low water content are conventional steps in the art of preparing prilled ammonium nitrate.

Brown Jr. et al. are relied on as evidence of the conventionality of an ammonium nitrate prilling method comprising mixing/reacting molten ammonium nitrate with ammonium sulfate and maintaining a water concentration less than 2% in the molten mixture. The purpose for taking these steps is to stabilize the prilled ammonium nitrate (Abstract, Column 3, lines 23-32 and 52-75, Column 4, line 65 to Column 5, line7).

Bradley is relied on as further evidence of the conventionality of an ammonium nitrate prilling method comprising mixing/reacting molten ammonium nitrate with ammonium sulfate and maintaining a water concentration less than 2% in the resulting molten mixture (Column 4, lines 33-55).

Therefore it would have been obvious to mix/react ammonium sulfate with the molten ammonium nitrate and maintain a water content of less than 2% in the molten mixture of De Bruyne et al. since it was known that these steps will stabilize the resulting prilled ammonium nitrate fertilizer.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Mahl Jr. et al. (US 4076773) teach prilling ammonium nitrate.
- Falck-Muss et al. (US 3649173), Kjohl et al. (US 4486396), Hobbs (US 6273929 B1) teach prilled ammonium nitrate with ammonium sulfate and low moisture.

- Yasumaro et al. (US 3214260) teach prilling fertilizers using a pressure nozzle.
- Chaleat et al. (US 4818279) teach prilling using pressurized nozzle and agitation.
- Tuttle (US 3607993) and Andrew (US 2979764) teach prilling with surface wiping blades and mechanical agitation.
- Harreither (US 5382145) and Andrew (US 2929107) teach prilling with rotating scrapers and blades.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Madsen whose telephone number is (703)305-0068. The examiner can normally be reached on 6:30AM-4:00PM M-F (except alternate Fridays).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on (703)308-3959. The fax phone numbers for the organization where this application or proceeding is assigned are (703)305-3599 for regular communications and (703)305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0061.

Robert Madsen
Examiner
Art Unit 1761
September 27, 2001

STEVEN WEINSTEIN
PRIMARY EXAMINER
ART UNIT 132 1761
FOR M. CANO